

**EXISTING LAKES REGION PROJECTS IN
TEN YEAR PLAN 2021-2030**

Municipality	Project #	Scope	Dates					Total Project Cost	
Belmont	40635	NH 140 and Main Street – Improve intersection safety and congestion		ROW	2023	CON	2025	\$0.7 m	
Bristol	40636	NH 104 – Roadway widening and shoulders for Bike-Ped travel from School Street to west of Danforth Brook Road	PE	2021	ROW	2023	CON	2026	\$2.9 m
Bristol	41579	Lake Street – Bike-Ped improvements	PE	2021	ROW	2023	CON	2026	\$2.6 m
Gilmanton	42603	NH 140 and NH 107 – construct pedestrian islands and sidewalks at intersection and improve curb	PE	2025	ROW	2028	CON	2030	\$1.9 m
Laconia	43845	NUS 3 and Weirs Boulevard bridge replacement	PE	2023	ROW	2024	CON	2026	\$2.8 m
Meredith	43533	NH 25 – 4 intersection improvements	PE	2027	ROW	2030	CON	2032	\$2.8 m
Moultonborough	40639	NH 25 and Lake Shore Drive – intersection safety improvements from just west of Lake Shore Drive (W) to just east of Lake Shore Drive (E)	PE	2022	ROW	2022	CON	2025	\$2.4 m
Moultonborough	41580	NH 25 – Complete Streets improvements to Central Village	PE	2023, 2025	ROW	2025	CON	2027	\$1.6 m
Moultonborough	41581	NH 25 and Sheridan Road – intersection improvements	PE	2023, 2025	ROW	2025	CON	2027	\$0.8 m
Moultonborough	42602	NH 25 and Redding Lane – intersection improvements	PE	2025	ROW	2027	CON	2029	\$0.8 m
Plymouth	41583	Highland Street – reconstruction and intersection improvements	PE	2022	ROW	2024	CON	2025	\$1.4 m
Plymouth	43532	NH 25 and Smith Bridge Road – intersection safety improvements (roundabout)	PE	2027	ROW	2030	CON	2032	\$2.8 m
Tilton	42600	Main Street and School Street – intersection safety improvements (roundabout)	PE	2024	ROW	2027	CON	2029	\$2.9 m
Wolfboro	29615	NH 28 – improvements from NH 109 to Alton town line	PE	2022	ROW	2024	CON	2025	\$10.6 m

Transportation Project Proposal Form

Contact Information

Full Name Joseph Perez **Municipality** Town of Plymouth
Email jperez@plymouth-nh.org **Affiliation** Town of Plymouth/LRPC
Phone Number 603-536-1731 **Title/Position** Assistant Planner

Transportation Project Information

Name/Title of Project Sightline and Pedestrian improvements to US-3 North of Tobey Road

Please select the project type(s):

- | | |
|--|---|
| <input checked="" type="checkbox"/> Highway Improvements (operational improvements, access management, intelligent transportation systems, widening, technology operation improvements) | <input type="checkbox"/> Planning Studies (road diets, corridor studies, network studies, pedestrian/cyclist safety studies) |
| <input type="checkbox"/> Asset Management (bridge rehabilitation, bridge replacement, pavement repair/replacement) | <input type="checkbox"/> Infrastructure-related Travel Demand Management (park & ride lots, transit or HOV lanes, priority signalization, bus shelters, intermodal transportation centers) |
| <input checked="" type="checkbox"/> Bicycle and Pedestrian Improvements (sidewalks, bike trails, multi-use paths, traffic calming improvements) | |

Where is this project located? *(road names, nearby facilities/landmarks)*

US-3 (Main Street) from Tobey Road to Fairgrounds Road, by National Guard Armory, Common Man Inn, Plymouth State University.

What is the scale of this project? *(please provide approximate measurements in feet; you can use Google Maps measuring tool to estimate distances)*

The project would improve horizontal and vertical curve deficiencies along approximately 1,200' of roadway near the National Guard Armory and add sidewalks along approximately 3,500' of roadway.

Purpose, Need, and Scope

Please provide the Purpose Statement for this project.

ex: "The purpose of this project is to support increased non-motorized activity by addressing safety issues resulting from unsafe vehicle speeds and inadequate protections for pedestrians on Main Street between 1st and 2nd Street."

The purpose of this project is to improve sight distance and provide pedestrian access by correcting poor road alignment (both vertical and horizontal) and a lack of pedestrian infrastructure on Main Street (US-3) north of Tobey Road to Fairgrounds Road. Providing a better and safer vehicular and pedestrian connection between the project area and downtown will contribute positively to Plymouth's health, economic success, and downtown vibrancy. It addresses the following goal of Plymouth's 2018 Master Plan: "focus on improving multimodal connectivity among schools, Plymouth State University, major employers, the downtown, Tenney Mtn. Hwy, and densely developed neighborhoods."

Please provide the Need Statement for this project.

ex: "The section of Main St between 1st Street and 2nd Street is unsafe for pedestrians. This section is in the center of the city's commercial district concentrated with jobs and small businesses. In the past 5 years there have been 15 crashes in this section of Main St: two resulted in serious injuries to pedestrians and one resulted in a pedestrian fatality. Continued local economic development depends on increased walkability and safety for pedestrians."

The project area includes a number of anchor businesses and employers in the Downtown Plymouth area, as well as sites that present prime opportunities for future economic development. Plymouth benefits from a vibrant outdoor recreation economy, and this project would provide a safer pedestrian and vehicular connection to downtown for guests staying at any of the three hotels on this end of Main Street. There is no pedestrian infrastructure currently in this area, and poor horizontal and vertical alignment at the Armory Rd intersection dangerously limits sight distance (see attached photos). In fact, NH National Guard personnel report that they have adjusted their travel route due to the unsafe intersection at the Armory. Compared to data from prior to 2019, the frequency of motor vehicle accidents in this area has increased from one collision every 3.2 months, to one collision every 2.4 months on average. Since 2014, AADT counts have averaged over 5,000 in this location, however Plymouth's significant seasonal fluctuations during Plymouth State University's (PSU) academic year suggest that the actual number would be much higher.

Please outline the project scope.

ex: "Install pedestrian crossings on Main Street at 1st and 2nd street intersections and at mid-block, including pedestrian refuge medians, other streetscaping and traffic calming infrastructure."

The project will correct horizontal and vertical deficiencies to improve sightlines, especially on the sloping curve at the Armory Road intersection. It will also add ADA-compliant sidewalks, curb ramps, and crosswalks where necessary, along

approximately 3,500 feet of NH Route 3/Main Street between Tobey Road and Fairgrounds Road.

Please provide any additional information about this project. *(local knowledge/insight, relevant studies/data, infrastructure needs, etc.)*

The Plymouth Police Department identifies this as the section of road in Plymouth with the 2nd greatest safety challenge (the Tenney Mountain Highway/Smith Bridge Road intersection is the top safety concern and this intersection is already on the Ten Year Plan). It has long been identified as a concern due to traffic to/from the National Guard Armory and Plymouth State University parking lots as well as the interest in improving the connection and pedestrian safety between downtown Plymouth and development at Foster Street (Common Man Inn and Foster's Restaurant) and Fairgrounds Road. In fact, a previous application for a similar project was submitted for this portion of US-3 in 2003. Over the past twenty years, the area has grown and the land use at abutting parcels of land have changed resulting in an increased need for the project. Plymouth State University students and hotel guests are frequently observed using the shoulder and/or the nearby active railroad as a pedestrian access to downtown creating an unsafe situation due to the road alignment on US-3 and obvious dangers associated with walking on the railroad tracks.

Supplementary Information

Please note that these questions are not required to make an initial submission. If you are not able to provide answers to some or all of these questions at this time, please leave the question(s) blank and [RPC name] staff will reach out to provide assistance.

How involved has the public been in this project proposal so far?

(please make note of any dates, agenda items, minutes from public meetings, and decisions influenced by public involvement)

The Plymouth Select Board discussed this project and expressed support for moving forward at their public meeting on June 27th, 2022. The project has been a local priority for decades, as reflected by the similar 2003 submittal of a Ten-Year Plan application to correct the horizontal and vertical alignment issues with this section of road.

Are there opportunities for further public discussion of this project in the near future?

The Plymouth Planning and Development Department is willing to host a public meeting to gain ideas on the roadway, adjacent land, and potential design ideas to enhance the overall project and meet community goals.

Will the project be managed locally?

Uncertain at this time, open to consideration of local management.

What alternative options or methods have been considered to address this need and what makes this project proposal the best option?

From a pedestrian perspective, the parallel Old North Main Street could be used to provide pedestrian access along

approximately 1/3 of the proposed project area. Doing so, however, requires pedestrians to cross an active rail line two different times, traverse a steep slope (not ADA compliant) beyond the poorly-lit southern dead-end of Old North Main Street while navigating crumbling and inadequate sidewalks which are inconsistent and out of compliance with modern standards. This would also not address the sightline and alignment issues at the Armory Road intersection.

Please provide evidence supporting this project, including letters of support.

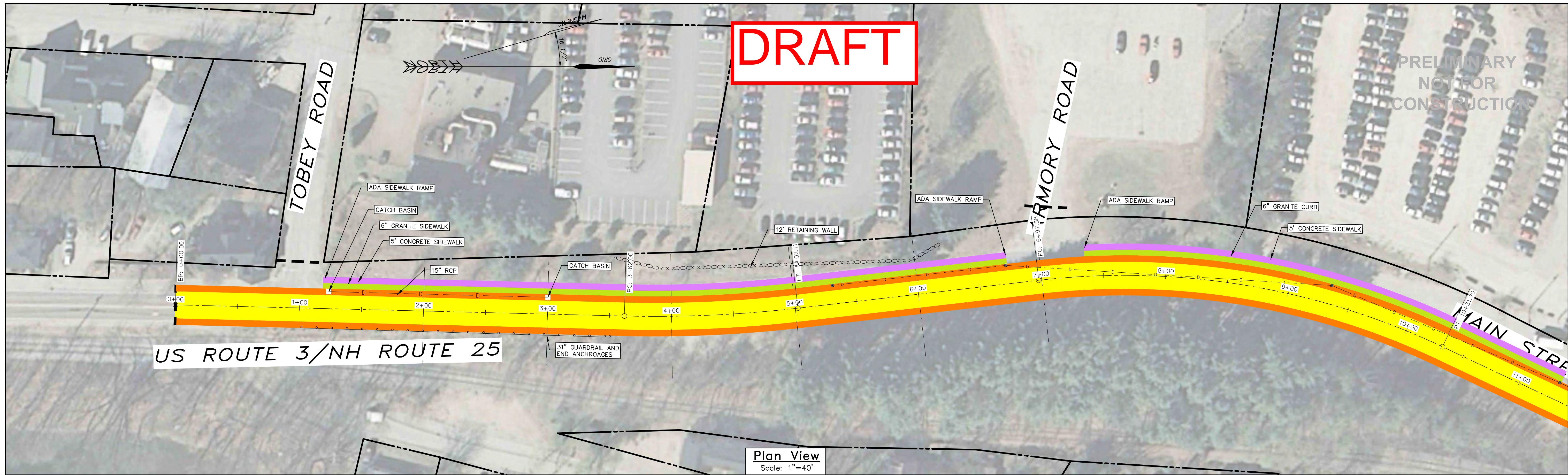
(review list of documents, letters of support, data sources, plans, guidance, maps, etc. that will serve as sources of information to bolster the application; please note what and where you are referencing from)

Please find attached letters of support for this project from Alex Ray, owner of the Common Man Inn and Restaurant; Steven Temperino, Plymouth State University Director of Public Safety; and Alex Hutchins, Town of Plymouth Police Chief. NH National Guard has been contacted and offered verbal support while they work through their chain of command on providing a formal letter of support. Also attached are two maps of the proposed project area, collision data from Plymouth Police records, and traffic counts from the NHDOT Transportation Data Management System. Recent photos (June 30, 2022) of the project site taken from the Armory Road intersection are also included.

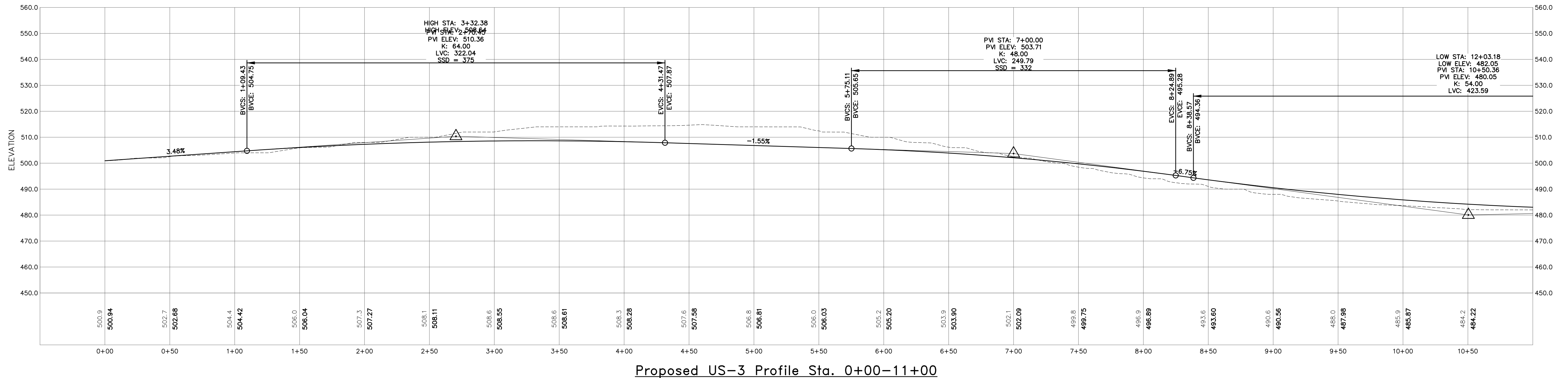
Submission

Please return this form to [Lakes Region Planning Commission] at: [INSERT ADDRESS, FAX, EMAIL]. Please attach any relevant documents, maps, cost estimates, and data to this project along with the form that you have:

- | | | |
|---|--|--|
| <input type="checkbox"/> Local Plans/Master Plans | <input checked="" type="checkbox"/> Maps | <input type="checkbox"/> Bike/Pedestrian Surveys |
| <input type="checkbox"/> Cost Estimate | <input type="checkbox"/> Transit Operator Data | <input type="checkbox"/> Project Scope |
| <input checked="" type="checkbox"/> Local Police Crash Data | <input type="checkbox"/> Development Studies | <input type="checkbox"/> Conceptual Designs |



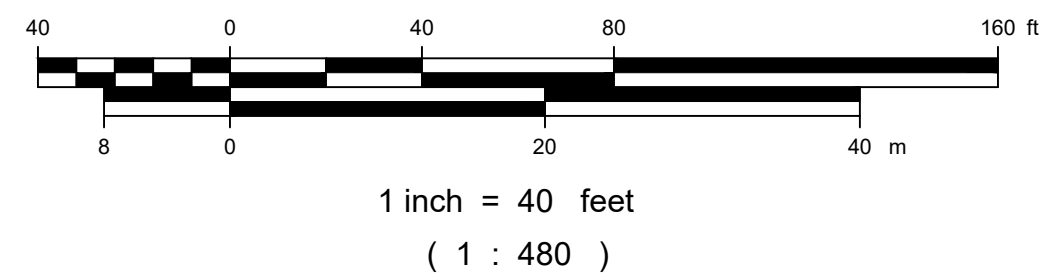
Plan View
Scale: 1"=40'



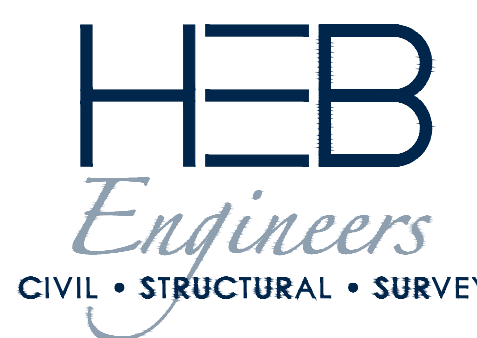
Proposed US-3 Profile Sta. 0+00-11+00

Scale:
Horizontal: 1"=40'
Vertical: 1"=20'

Legend



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No.	Revision	DATE	BY		



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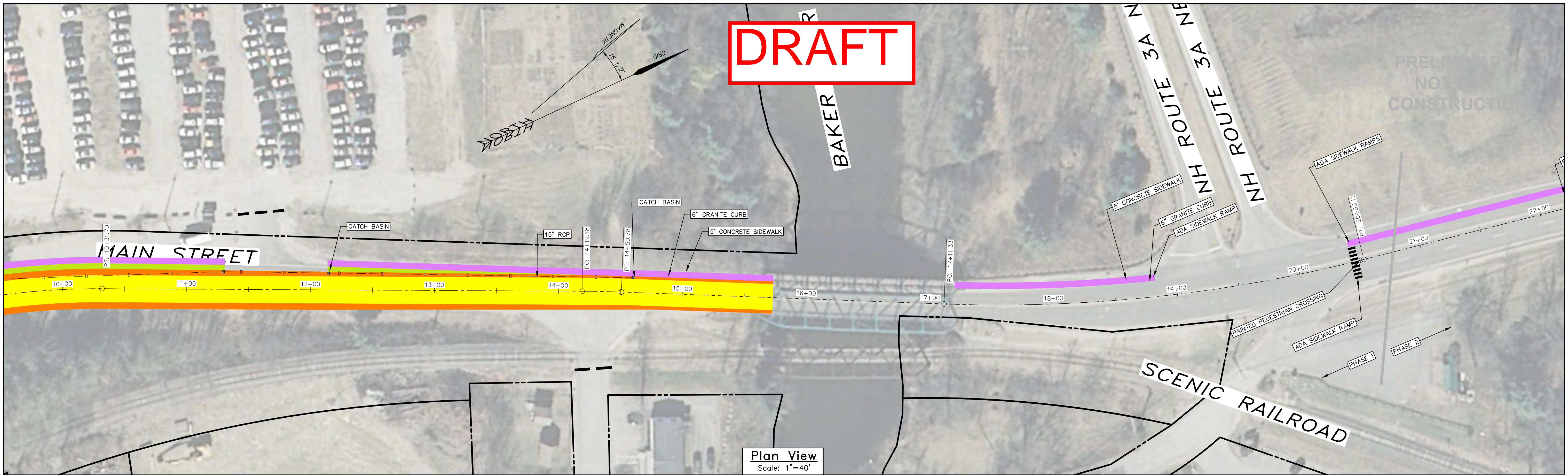
US-3 Site Sketch
 for the
US 3 Plymouth
 located in
Plymouth, NH
 prepared for
Lakes Region Planning Commission

PRELIMINARY
NOT FOR
CONSTRUCTION

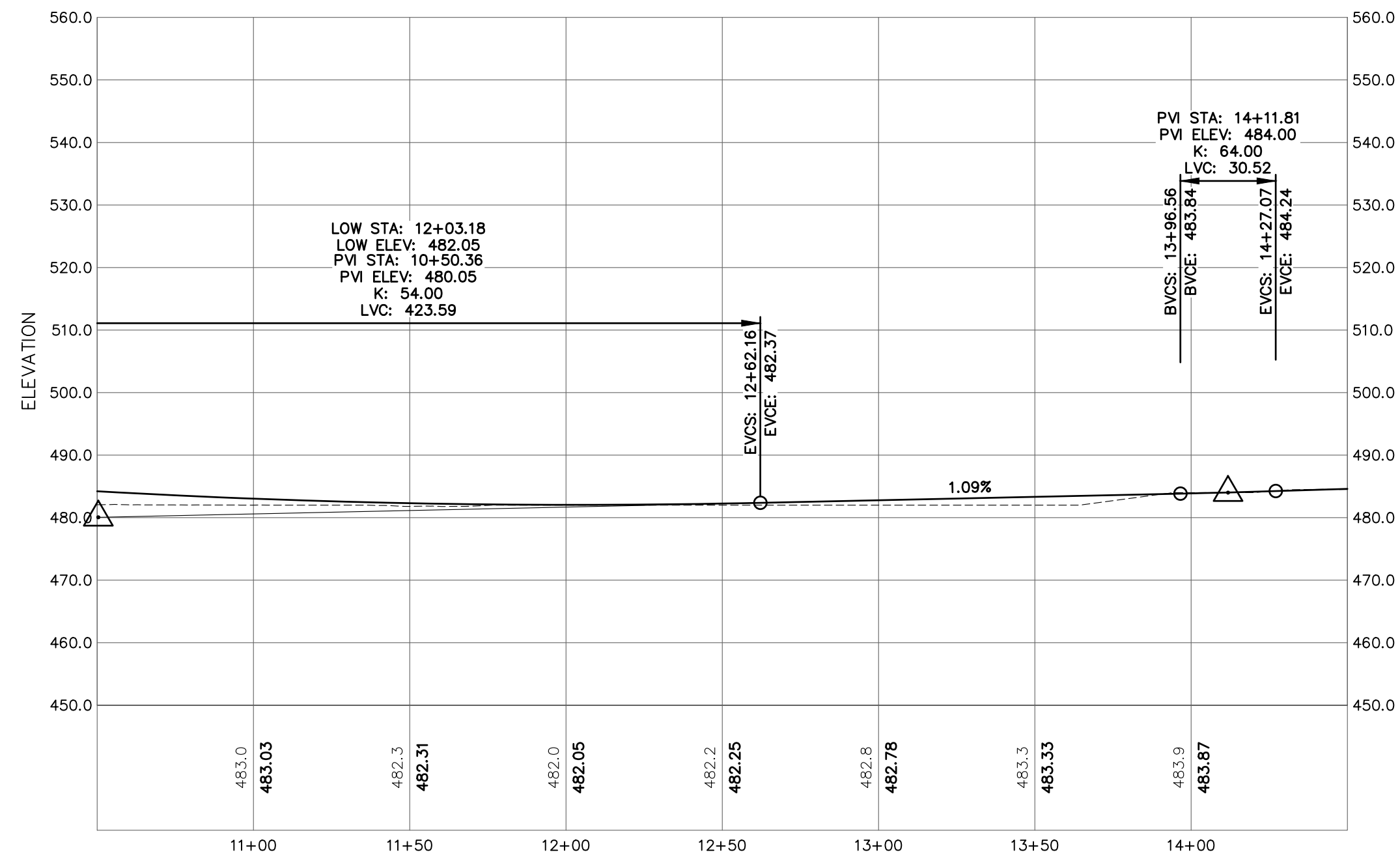
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PRELIMINARY
NOT FOR
CONSTRUCTION

SK-1
SHEET 1 OF 4

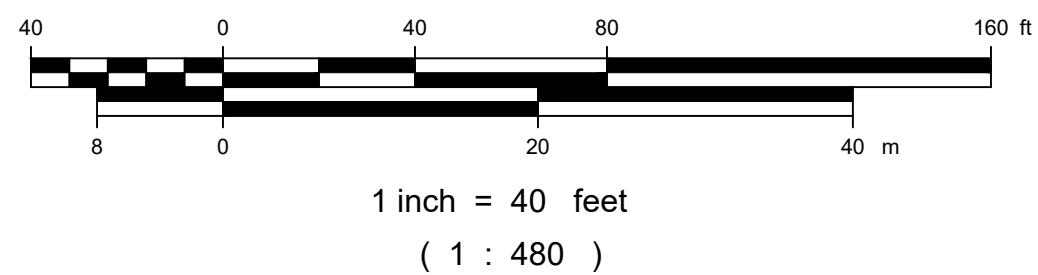


2022-105
US-3 Site Sketch
US 3 Plymouth

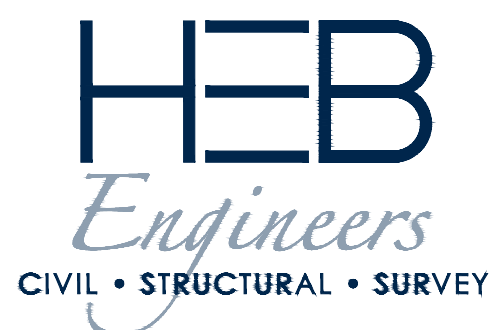


Legend

	Proposed Road
	Proposed Shoulder
	Proposed Sidewalk
	Proposed Snow Shelf



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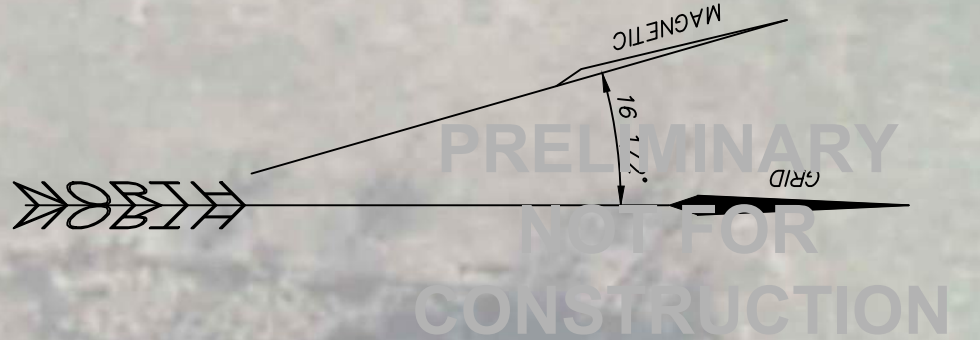
US-3 Site Sketch
for the
US 3 Plymouth
located in
Plymouth, NH
prepared for
Lakes Region Planning Commission

2022-105

SK-1

SHEET 1 OF 4

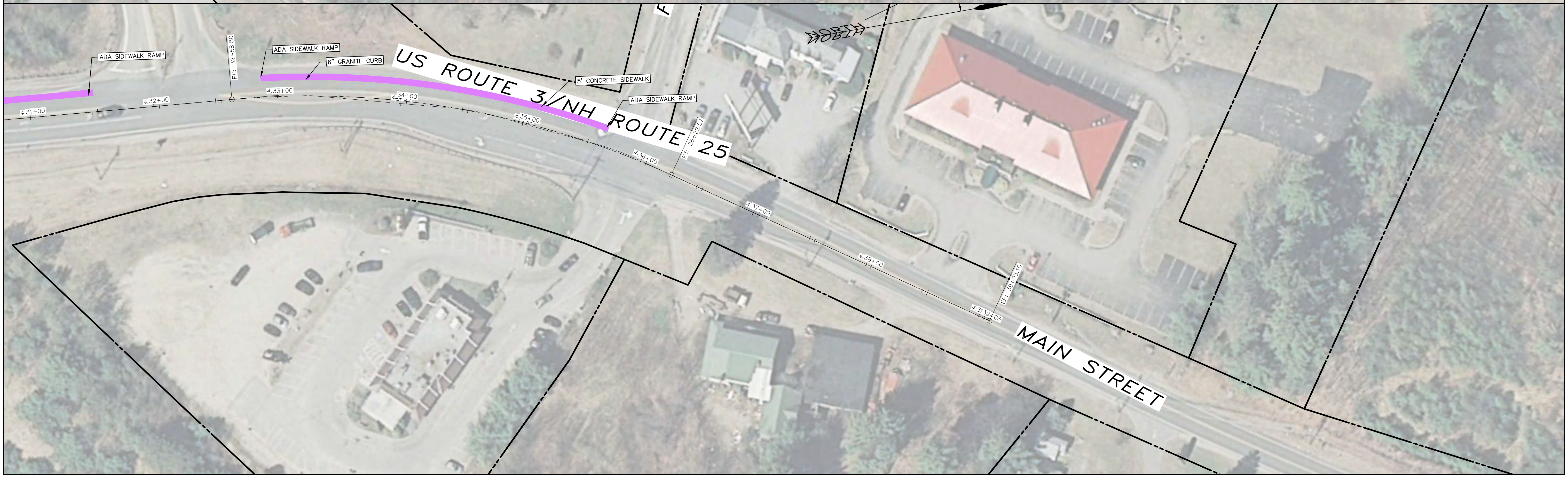
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SK-1
SHEET 1 OF 4

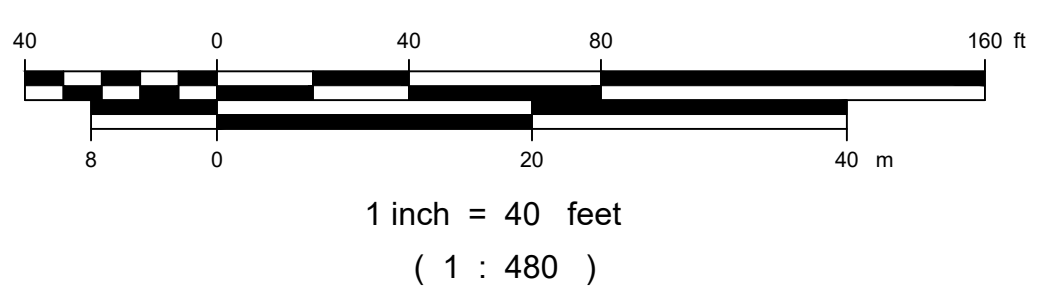


2022-105
US-3 Site Sketch
US 3 Plymouth

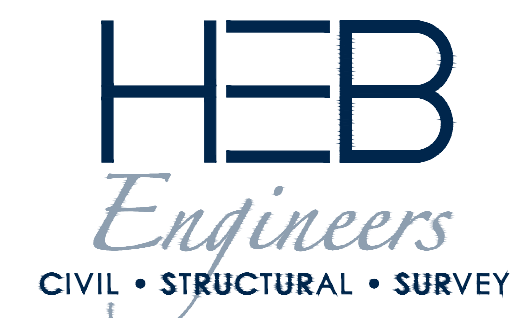


Legend

	Proposed Road
	Proposed Shoulder
	Proposed Sidewalk



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US-3 Site Sketch
for the
US 3 Plymouth
located in
Plymouth, NH
prepared for
Lakes Region Planning Commission

2022-105
SK-1
SHEET 1 OF 4

Engineer's Opinion of Probable Construction Cost

HEB Project #: 2022-105
Date: 11/02/22
Computed by: JDP

Roadway & Pedestrian Improvements on US-3
Plymouth, New Hampshire

NHDOT Item #	Description	Unit	Unit Cost	Phase 1: Tobey Road to Foster Street		Phase 2: Foster Street to Fairgrounds Rd.	
				Quantity	Total Cost	Quantity	Total Cost
Earthwork							
201.1	Clearing and Grubbing	Acre	\$ 25,000.00	0.5	\$ 12,500.00	0.0	\$ -
203.1	Common Excavation	CY	\$ 18.00	8,200	\$ 147,600.00	111	\$ 2,000.00
203.2	Rock Excavation	CY	\$ 90.00	1,000	\$ 90,000.00	5	\$ 450.00
214	Fine Grading	Unit	\$ 25,000.00	1	\$ 25,000.00	1	\$ 2,500.00
Base Courses							
304.1	Sand	CY	\$ 30.00	1,333	\$ 40,000.00	0	\$ -
304.2	Gravel	CY	\$ 35.00	1,333	\$ 46,666.67	0	\$ -
304.3	Crushed Gravel	CY	\$ 40.00	1,542	\$ 61,666.67	222	\$ 8,888.89
Pavements							
403.11	Hot Bituminous Pavement, Machine Method	Ton	\$ 90.00	1,334	\$ 120,060.00	0	\$ -
403.12	Hot Bituminous Pavement, Hand Method	Ton	\$ 200.00	30	\$ 6,000.00	60	\$ 12,000.00
410.22	Asphalt Emulsion for Tack Coat	Gal	\$ 8.00	660	\$ 5,280.00	40	\$ 320.00
417	Cold Planing Bituminous Surfaces	SY	\$ 5.00	1,250	\$ 6,250.00	0	\$ -
Structures							
n/a	Retaining Wall	SF	\$ 150.00	3,500	\$ 525,000.00	0	\$ -
Incidental Construction							
603.00215	15" R.C. Pipe 2000D	LF	\$ 100.00	360	\$ 36,000.00	400	\$ 40,000.00
604.124	Catch Basin, Type B, 4'-Diameter	EA	\$ 4,000.00	3	\$ 12,000.00	2	\$ 8,000.00
604.4	Reconstructing/Adjusting Catch Basins	LF	\$ 750.00	2	\$ 1,500.00	2	\$ 1,500.00
604.62	Drainage Manhole Cover and Frames	EA	\$ 700.00	3	\$ 2,100.00	2	\$ 1,400.00
606.18001	31" W-Beam Guardrail with 8" Offset Block (Steel Post)	LF	\$ 45.00	250	\$ 11,250.00	50	\$ 2,250.00
606.82	Anchorage for Bean Guardrail	EA	\$ 4,000.00	2	\$ 8,000.00	1	\$ 4,000.00
608.24	4" Concrete Sidewalk (F)	SY	\$ 70.00	890	\$ 62,300.00	889	\$ 62,222.22
608.54	Detectable Warning Plates	SY	\$ 500.00	8	\$ 4,000.00	3	\$ 1,500.00
609.01	Straight Granite Curb	LF	\$ 60.00	1,600	\$ 96,000.00	1,600	\$ 96,000.00
615.024	Relocating Traffic Sign Type B	EA	\$ 600.00	6	\$ 3,600.00	6	\$ 3,600.00
615.02201	Traffic Sign Type B, Breakaway Mounts	SF	\$ 180.00	6	\$ 1,080.00	0	\$ -
618.7	Flaggers	HR	\$ 55.00	640	\$ 35,200.00	0	\$ -
619.1	Maintenance of Traffic	Unit	\$ 1.00	73,587.9	\$ 74,000.00	13,450	\$ 13,450.00
628.2	Sawed Bituminous Pavement	LF	\$ 4.00	780	\$ 3,120.00	1,600	\$ 6,400.00
632.0104	Retroreflective Paint Pavement Marking, 4" Line	LF	\$ 0.50	6,400	\$ 3,200.00	0	\$ -
632.0124	Retroreflective Paint Pavement Marking, 24" Line	LF	\$ 0.75	512	\$ 384.00	0	\$ -
645.531	Silt Fence	LF	\$ 5.00	3,000	\$ 15,000.00	500	\$ 2,500.00
646.31	Turf Establishment with Mulch and Tackifiers	SY	\$ 7.00	4,000	\$ 28,000.00	40	\$ 280.00
692	Mobilization	Unit	\$ 1.00	131,108.2	\$ 131,108.16	24,200	\$ 24,200.00
698.13	Field Office Type C	Mo.	\$ 2,000.00	9	\$ 18,000.00	4	\$ 8,000.00
699	Miscellaneous Temporary Erosion and Sediment Controls	\$	\$ 30,000.00	1	\$ 30,000.00	1	\$ 5,000.00
	Utility Pole Relocations	EA	\$ 15,000.00	1	\$ 15,000.00	0	\$ -
				Phase 1: Tobey Rd. to Foster St.		Phase 2: Foster St. to Fairgrounds Rd. (Sidewalk & Curbing)	
				Construction Items (Base)	\$1,677,000	Construction Items (Base)	\$307,000
				Minor Item Allowance (20%)	\$336,000	Minor Item Allowance (30%)	\$93,000
				Contingency (10%)	\$168,000	Contingency (10%)	\$31,000
				2023 Cons. Engineering	\$420,000	2023 Cons. Engineering	\$123,000
				2023 Construction Cost	\$2,601,000	2023 Construction Cost	\$554,000
				2034 TYP Construction Cost	\$3,525,000	2034 Construction Cost	\$751,000
				2023 Prelim. Engineering	\$521,000	2023 Prelim. Engineering	\$84,000
				2029 TYP Prelim. Engineering	\$705,000	2029 Prelim. Engineering	\$113,000
				2023 Right-of-way	\$50,000	2023 Right-of-way	\$0
				2031 Right-of-way	\$63,000	2031 Right-of-way	\$0
				Total Project Cost (Current)	\$3,172,000	Total Project Cost (Current)	\$638,000
				Total Project Cost (TYP)	\$4,293,000	Total Project Cost (TYP)	\$864,000



Transportation Project Proposal Form

Hello! This is the form for transportation project proposals (Ten Year Plan Projects) to the Lakes Region Planning Commission. If you have any questions about filling out this form, please call Jessica Bighinatti (Assistant Planner) at (603)-279-8171 or Susan Slack at (603)-279-5337; or email us at jbighinatti@lakesrpc.org (<mailto:jbighinatti@lakesrpc.org>) or sslack@lakesrpc.org (<mailto:sslack@lakesrpc.org>).

* Required

Contact Details

1. Full Name: *

2. Best Phone Number: *

3. Email Address: *

4. Municipality: *

5. Organization/Entity: *

6. Position/Title: *

Project Information

7. Title/Name of project: *

8. Project type(s): *

- Highway Improvements (operational improvements, access management, intelligent transportation systems, widening, technology operation improvements)
- Asset Management (bridge rehabilitation, bridge replacement, pavement repair/replacement)
- Bicycle and Pedestrian Improvements (sidewalks, bike trails, multi-use paths, traffic calming improvements)
- Infrastructure-related Travel Demand Management (park & ride lots, transit or HOV lanes, priority signalization, bus shelters, intermodal transportation centers)
- Planning Studies (road diets, corridor studies, network studies, pedestrian/cyclist safety studies)

9. Where is this project located?

(road names, nearby facilities/landmarks) *

10. What is the scale of this project?

(please provide approximate measurements in feet; you can use Google Maps measuring tool to estimate distances) *



Purpose, Need, and Scope

11. Please provide the Purpose Statement for this project.

ex: "The purpose of this project is to support increased non-motorized activity by addressing safety issues resulting from unsafe vehicle speeds and inadequate protections for pedestrians on Main Street between 1st and 2nd Street." *

12. Please provide the Need Statement for this project.

ex: "The section of Main St between 1st Street and 2nd Street is unsafe for pedestrians. This section is in the center of the city's commercial district concentrated with jobs and small businesses. In the past 5 years there have been 15 crashes in this section of Main St: two resulted in serious injuries to pedestrians and one resulted in a pedestrian fatality. Continued local economic development depends on increased walkability and safety for pedestrians." *

13. Please outline the project scope.

ex. "Install pedestrian crossings on Main Street at 1st and 2nd street intersections and at mid-block, including pedestrian refuge medians, other streetscaping and traffic calming infrastructure." *

14. Please provide any additional information about this project.

(local knowledge/insight, relevant studies/data, infrastructure needs, etc.) *

Supplementary Information

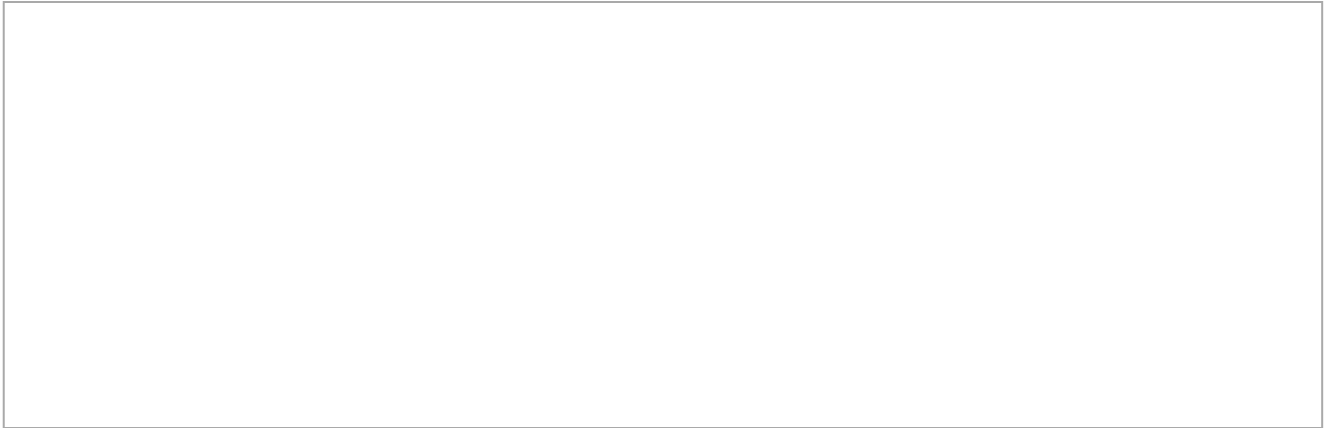
Please note that these questions are not required to make an initial submission. If you are not able to provide answers to some or all of these questions at this time, please leave the question(s) blank and Jess or Susan will reach out to provide assistance.

15. How involved has the public been in this project proposal so far?

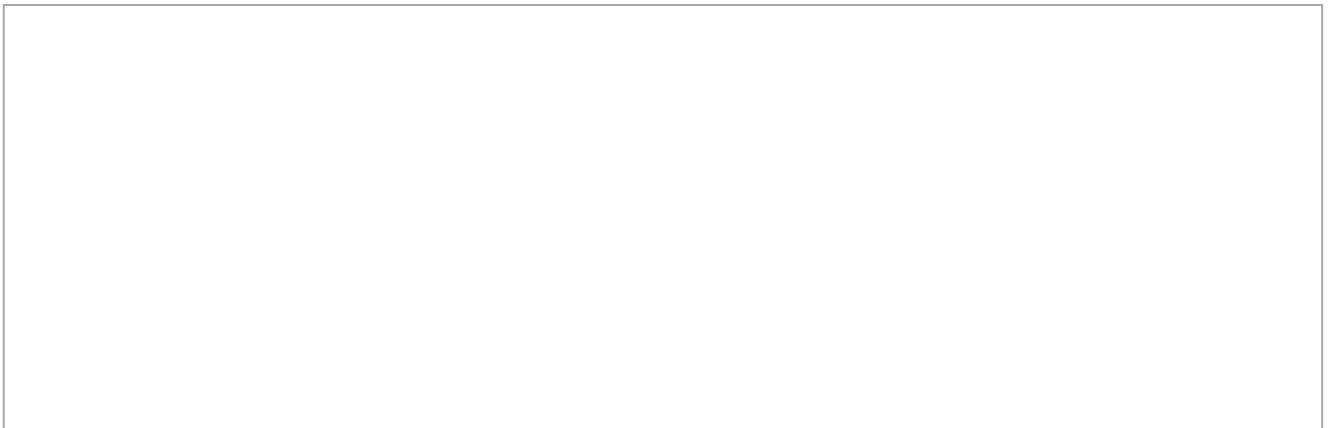
(please make note of any dates, agenda items, minutes from public meetings, and decisions influenced by public involvement)

16. Are there opportunities for further public discussion of this project in the near future?

17. Will the project be managed locally?

A large, empty rectangular box with a thin black border, intended for the user to provide an answer to question 17.

18. What alternative options or methods have been considered to address this need and what makes this project proposal the best option?

A large, empty rectangular box with a thin black border, intended for the user to provide an answer to question 18.

19. Please provide evidence supporting this project, including letters of support.

(review list of documents, letters of support, data sources, plans, guidance, maps, etc. that will serve as sources of information to bolster the application; please note what and where you are referencing from)

A large, empty rectangular box with a thin black border, intended for the applicant to provide evidence supporting the project, such as letters of support, data sources, plans, guidance, and maps.

Thank You!

Thank you for completing this project proposal form.

Please email any relevant documents, maps, cost estimates, and data (local plans/master plans, cost estimate, local police crash data, maps, transit operator data, development studies, bike/pedestrian surveys, project scope, conceptual design, etc.) to this project that you have to jbighinatti@lakesrpc.org (<mailto:jbighinatti@lakesrpc.org>), or sslack@lakesrpc.org (<mailto:sslack@lakesrpc.org>).

If you have any questions please call Jess at (603)-279-8171 or Susan at (603)-279-5337

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 Microsoft Forms

Union Avenue Rehabilitation

Laconia, NH

Krista Larsen, P.E.
Assistant Public Works Director
(603) 528-6379 • KLarsen@laconianh.gov

8. Project Type: Highway

9. Location: Route 107/Union Avenue from Route 106/Main St to Route 11A/Gilford Ave

10. Scale: 3,000-ft

11. Purpose: The purpose of this project is to rehabilitate this heavily travelled and populated downtown corridor in the lakes region. The rehabilitation will include replacing underground utilities including stormwater/drainage infrastructure, structural roadway improvements, pedestrian accessibility, traffic and pedestrian signals, and streetscape and lighting.

12. Need: The project will provide adequate stormwater management that can handle higher intensity storm events, bring all sidewalks and pedestrian crossings to the standards of the Americans with Disabilities Act (ADA), rebuild the roadway subbase and install proper asphalt thickness to handle increasing vehicle loads and truck traffic, update traffic and pedestrian signals and incorporate streetscapes and lighting to enhance this downtown setting.

Network Significance – The 2019 Annual average daily traffic (AADT) count was 11,120. This is up 40% from 3 years ago. This section of Route 107 has comparable use to the Route 3 bypass which had a 2019 AADT count of 11,335. Unlike the Route 3 Bypass, however, Union Avenue has a significant amount of pedestrian traffic and is an urban setting. Route 107 is identified as a major state route by the Lakes Region Planning Commission.

Safety – Safe Transportation for Every Pedestrian (STEP) countermeasures are included in the project including crosswalk visibility enhancements, countdown timers and chirpers. With the amount of vehicle and pedestrian traffic, including significant freight movement, safe access in this section of Route 107 is critical.

Economic Development – Revitalization of downtown areas following major roadway rehabilitation projects is well documented. Laconia has recently completed three major road reconstruction projects in the last 3 years – Union Ave/Route 3 in Lakeport, Lakeside Avenue at the Weirs, and Court Street/Route 3 from the Belmont town line to downtown. In all three cases, vacant buildings gained new tenants and existing businesses made valuable improvements that served to greatly enhance these commercial and residential districts.

State of Repair – The existing infrastructure is aged and failing and in need of continuous maintenance. The project proposes to first replace the water and sewer mains providing reliable services to homes and businesses. Next the project will upgrade the undersized drainage system giving it the capacity to withstand higher intensity storm events. The roadway will then be upgraded with proper road base materials and pavement thickness that will provide the structural support for the amount and type of traffic loading. All of these improvements will dramatically reduce the maintenance that is currently required in this area.

Mobility – Route 107 is considered an arterial in accordance with FHWA Highway Functional Classification Guidance. The NHDOT 2019 NH Freight Plan states that “The primary arterial highways which pass through developed areas present some level of congestion throughout the day and are

Union Avenue Rehabilitation Laconia, NH

Krista Larsen, P.E.
Assistant Public Works Director
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therefore prominent among the high-delay links. Among these, several high-delay corridors can be identified: Routes between Laconia and both I-93 and I-393.” Route 107 is identified as part of this arterial network.

Equity, Environmental Justice & Accessibility – Laconia stands out in the Lakes Region with 23% of its population below 150% of the poverty threshold and 4.8% of its population as non-white. The urban revitalization that often occurs as the result of road rehabilitation projects is crucial for potential job creation for this under-served, low income, minority population. Constructing sidewalks and pedestrian crossings to proper standards will provide for safer and more accessible pedestrian travel including access to Lakes Region General Hospital. The upgraded stormwater drainage system will be equipped to handle high intensity storm events, preventing uncontrolled runoff into the Winnepesaukee River which runs parallel to this section of Union Avenue, while providing stormwater treatment.

Natural Hazard Resiliency – In addition to properly sizing the stormwater collection system, the project proposes to re-route a portion of the drainage system from flood prone Jewett Brook to a new permitted outfall in the Winnepesaukee River.

13. Scope: The scope includes underground utility improvements, road, sidewalk and intersection reconstruction, pedestrian accessibility to ADA standards, improved stormwater management and streetscape enhancements.

14. Additional info: Route 107/Union Avenue is a vital connector for business and commerce between Interstate 93 and Route 3 and Route 11 and locally provides access to Lakes Region General Hospital. The sidewalks, intersections, roadway structure and stormwater infrastructure is substandard for this main corridor in the heart of the Lakes Region. This section of Union Avenue will also tie together three major roadway rehabilitation projects that Laconia has completed in the last two years providing a safe and high-quality driving, walking and bicycling experience from Lake Winnisquam to Lake Winnepesaukee. The project is currently at 90% design completion.

15. How involved has the public been in this project proposal so far? A public input session was held during the design phase of the project with the intent to obtain first hand knowledge and experience of the project area. This included commonly used pedestrian routes, known puddling and drainage problems, road and sidewalk deficiencies and desired enhancements to be incorporated into the streetscape design.

16. Are there opportunities for further public discussion? Yes. There will be opportunities for the public to provide feedback, ask questions and provide suggestions during the implementation process.

17. Will the project be managed locally? Yes. The project will be managed by the City of Laconia.

**Union Avenue Rehabilitation
Laconia, NH**

**Krista Larsen, P.E.
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18. What alternative options or methods have been considered to address this need and what makes this project proposal the best option?

Alternate options include no changes to the roadway, or a paving overlay with no infrastructure or roadway structural improvements. The roadway and sidewalks are in immediate need of attention and pose potential hazards to the travelling public. A “no work” option is not a viable long-term solution. Another option, in lieu of “no work” or complete roadway reconstruction, would be a simple paving overlay that would address the maintenance issues in the short term. However, this is also not deemed a viable long-term solution because it does not address the deficiencies of the infrastructure, roadway structure and pedestrian accessibility.

19. Please provide evidence supporting this project, including letters of support



PROJECT NAME: Union Avenue Improvement Project
(Main St to Gilford Ave)

PROJECT NO.: 1082 CITY/TOWN: Laconia

CALCULATED BY: STF DATE: 2/13/2019

CHECKED BY: PAC DATE: 2/13/2019

Engineers Opinion of Probable Construction Cost (Preliminary Design)

Item #	Item Description	Unit	Unit Cost	Quantity	Cost
*****ROAD ITEMS (A)*****					
201.21	REMOVING SMALL TREES	EA	\$ 975.00	4	\$ 3,900.00
202.204	REMOVAL OF CONCRETE STEPS	U	\$ 400.00	1	\$ 400.00
202.31	FILL ABANDONED PIPE	CY	\$ 150.00	62	\$ 9,225.00
202.32	FILL AND ABANDON STRUCT.	CY	\$ 50.00	28	\$ 1,400.00
202.41	REMOVAL OF EXISTING PIPE 0-24" DIAMETER	LF	\$ 15.00	4,376	\$ 65,640.00
202.5	REMOVAL OF CATCH BASINS, DROP INLETS AND MANHOLES	EA	\$ 350.00	56	\$ 19,600.00
202.6	CURB REMOVAL FOR STORAGE	LF	\$ 5.00	216	\$ 1,080.00
203.1	COMMON EXCAVATION	CY	\$ 22.00	10,320	\$ 227,050.19
203.2	ROCK EXCAVATION	CY	\$ 40.00	493	\$ 19,700.00
206.19	COMMON STRUCTURE EXCAVATION EXPLORATORY	CY	\$ 65.00	10	\$ 650.00
206.2	ROCK STRUCTURE EXCAVATION	CY	\$ 110.00	900	\$ 99,000.00
214	FINE GRADING	U	\$ 36,500.00	1	\$ 36,500.00
304.2	GRAVEL (F)	CY	\$ 30.00	4,395	\$ 131,850.00
304.4	CRUSHED STONE (FINE GRADATION) (F)	CY	\$ 32.00	5,360	\$ 171,520.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	T	\$ 74.00	4,500	\$ 333,000.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	T	\$ 115.00	215	\$ 24,725.00
403.99	TEMPORARY BITUMINOUS PAVEMENT	T	\$ 115.00	185	\$ 21,275.00
410.22	ASPHALT EMULSION FOR TACK COAT	GAL	\$ 5.00	600	\$ 3,000.00
417	COLD PLANING BITUMINOUS SURFACES	SY	\$ 15.00	555	\$ 8,325.00
520.2	CONCRETE CLASS B	CY	\$ 310.00	35	\$ 10,850.00
570.51	RETAINING WALL/HEADWALL (F)	LS	\$ 15,000.00	1	\$ 15,000.00
603.0001	VIDEO INSPECTION	LF	\$ 2.00	2,575	\$ 5,150.00
603.80212	12" PLASTIC PIPE (SMOOTH INTERIOR)	LF	\$ 40.00	820	\$ 32,800.00
603.80215	15" PLASTIC PIPE (SMOOTH INTERIOR)	LF	\$ 42.00	360	\$ 15,120.00
603.80218	18" PLASTIC PIPE (SMOOTH INTERIOR)	LF	\$ 52.00	410	\$ 21,320.00
603.80224	24" PLASTIC PIPE (SMOOTH INTERIOR)	LF	\$ 95.00	500	\$ 47,500.00
603.8023	30" PLASTIC PIPE (SMOOTH INTERIOR)	LF	\$ 140.00	485	\$ 67,900.00
603.81404	4" PVC DRAIN PIPE (SCHEDULE 80)	LF	\$ 20.00	12	\$ 240.00
604.0007	POLYETHYLENE LINER	EA	\$ 150.00	41	\$ 6,150.00
604.124	CATCH BASINS TYPE B, 4-FOOT DIAMETER	U	\$ 2,500.00	34	\$ 85,000.00
604.125	CATCH BASINS TYPE B, 5-FOOT DIAMETER	U	\$ 3,200.00	3	\$ 9,600.00
604.1252	CATCH BASINS TYPE B, 5-FOOT DIAMETER, DOUBLE GRATE	U	\$ 3,500.00	4	\$ 14,000.00
604.324	DRAINAGE MANHOLES, 4-FOOT DIAMETER	U	\$ 3,000.00	10	\$ 30,000.00
604.325	DRAINAGE MANHOLES, 5-FOOT DIAMETER	U	\$ 3,500.00	7	\$ 24,500.00
604.326	DRAINAGE MANHOLES, 6-FOOT DIAMETER	U	\$ 4,500.00	1	\$ 4,500.00
604.5	RECONSTRUCTING/ADJUSTING MANHOLES	LF	\$ 500.00	7	\$ 3,500.00
608.1301	3" BITUMINOUS SIDEWALK	SY	\$ 10.00	3,672	\$ 36,716.67
608.2601	6" CONCRETE SIDEWALK	SY	\$ 65.00	415	\$ 26,975.00
608.54	DETECTABLE WARNING DEVICES, CAST IRON	SY	\$ 60.00	60	\$ 3,600.00
609.01	STRAIGHT GRANITE CURB	LF	\$ 23.00	1,880	\$ 43,240.00
609.02	CURVED GRANITE CURB	LF	\$ 25.00	550	\$ 13,750.00
609.5	RESET GRANITE CURB	LF	\$ 15.00	3,164	\$ 47,460.00
614.511	14" CONCRETE PULLBOX	EA	\$ 575.00	4	\$ 2,300.00
614.73218	3" 2-DUCT PVC CONDUIT, SCHEDULE 80	LF	\$ 356.00	200	\$ 71,200.00
615.0301	TRAFFIC SIGN TYPE C	SF	\$ 50.00	200	\$ 10,000.00
615.0601	TRAFFIC SIGN TYPE CC	SF	\$ 25.00	25	\$ 625.00
616.192	ALTERATIONS TO TRAFFIC SIGNAL (UNION AVENUE/CHURCH STREET)	LS	\$ 41,000.00	1	\$ 41,000.00
616.193	ALTERATIONS TO TRAFFIC SIGNAL (UNION AVENUE/GILFORD AVENUE)	LS	\$ 37,000.00	1	\$ 37,000.00
618.61	UNIFORMED OFFICER WITH VEHICLE	\$	\$ 4,000.00	1	\$ 4,000.00
618.7	FLAGGERS	HR	\$ 23.00	5,000	\$ 115,000.00
619.1	MAINTENANCE OF TRAFFIC	U	\$ 50,000.00	1	\$ 50,000.00
619.25	PORTABLE CHANGEABLE MESSAGE SIGN	U	\$ 3,800.00	5	\$ 19,000.00
628.2	SAWED BITUMINOUS PAVEMENT	LF	\$ 2.00	1,270	\$ 2,540.00
632.0104	RETROREFLECTIVE PAINT PAVE. MARKING, 4" LINE	LF	\$ 0.25	13,545	\$ 3,386.25
632.3112	RETROREFLECTIVE THERMOPLAS. PAVE. MARKING, 12" LINE	LF	\$ 2.50	2,980	\$ 7,450.00
632.3118	RETROREFLECTIVE THERMOPLAS. PAVE. MARKING, 18" LINE	LF	\$ 2.50	330	\$ 825.00
632.32	RETROREFLECT. THERMOPLAS. PAVEMENT MARKING, SYMBOL OR WORD	SF	\$ 2.25	380	\$ 855.00
637.1	NEW GRANITE STEPS	U	\$ 1,500.00	1	\$ 1,500.00
643.21	FERTILIZER FOR REFERTILIZATION	LB	\$ 2.50	200	\$ 500.00
645.512	COMPOST SOCK FOR PERIMETER BERM	LF	\$ 4.50	800	\$ 3,600.00
645.7	STORMWATER POLLUTION PREVENTION PLAN	U	\$ 3,600.00	1	\$ 3,600.00
645.71	MONITORING SWPPP & EROSION & SEDIMENT CONTROLS	HR	\$ 85.00	180	\$ 15,300.00
646.51	TURF ESTABLISHMENT WITH MULCH, TACKIFIERS AND LOAM	SY	\$ 5.25	600	\$ 3,150.00
692	MOBILIZATION	U	\$ 148,000.00	1	\$ 148,000.00
699	MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL	\$	\$ 1.00	10,000	\$ 10,000.00
1010.15	FUEL ADJUSTMENT	\$	\$ 1.00	20,000	\$ 20,000.00
1010.2	ASPHALT CEMENT ADJUSTMENT	\$	\$ 1.00	10,000	\$ 10,000.00
	FINAL DESIGN ITEMS (2%)	LS	\$ 60,000.00	1	\$ 60,000.00
	LANDSCAPING	LS	\$ 50,000.00	1	\$ 50,000.00
				SUBTOTAL	\$ 2,433,543.10



PROJECT NAME: Union Avenue Improvement Project
(Main St to Gilford Ave)

PROJECT NO.: 1082 CITY/TOWN: Laconia

CALCULATED BY: STF DATE: 2/13/2019

CHECKED BY: PAC DATE: 2/13/2019

Engineers Opinion of Probable Construction Cost (Preliminary Design)

Item #	Item Description	Unit	Unit Cost	Quantity	Cost
*****SEWER ITEMS (C)*****					
206.2	ROCK STRUCTURE EXCAVATION	CY	\$ 110.00	245	\$ 26,950.00
304.2	GRAVEL (F)	CY	\$ 30.00	465	\$ 13,950.00
403.99	TEMPORARY BITUMINOUS PAVEMENT	T	\$ 115.00	765	\$ 87,975.00
612.3104	SEWER MANHOLES, 4-FOOT DIAMETER	VF	\$ 600.00	180	\$ 108,000.00
612.73506	6" SDR 35 SEWER PIPE	LF	\$ 70.00	1235	\$ 86,450.00
612.73508	8" SDR 35 SEWER PIPE	LF	\$ 90.00	2830	\$ 254,700.00
612.73510	10" SDR 35 SEWER PIPE	LF	\$ 100.00	95	\$ 9,500.00
	TEMPORARY SEWAGE BY-PASS PUMPING	HR	\$ 60.00	320	\$ 19,200.00
	JEWETT STREET	LS	\$ 50,000.00	1	\$ 50,000.00
				SUBTOTAL	\$ 656,725.00

Project Construction Subtotal	\$ 3,100,000.00
Project Construction Contingency (10%)	\$ 310,000.00
Project Base Construction Cost	\$ 3,410,000.00
Construction Engineering	\$ 317,000.00
Total Project	\$ 3,727,000.00

Cost Breakdown by Category

General Items	\$ 742,000.00
Roadway	\$ 2,001,543.10
Sewer	\$ 656,725.00
Water	\$ 2,658,268.10

Percent of Project Cost -
Percentage Used to Allocate
General Items

Roadway	75%
Sewer	25%
Water	

Cost Breakdown by Category -
Including General Item Allocation

Roadway	\$ 2,560,000.00
Sewer	\$ 850,000.00
Water	\$ 3,410,000.00

Cost Breakdown by Category -
Construction Engineering

Roadway	\$ 237,750.00
Sewer	\$ 79,250.00
Water	\$ 317,000.00

Transportation Project Proposal

Town of Meredith, NH



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8. Excerpts from: <u>NHDOT Statewide Freight Plan-Final Report, 2019</u>	
9. Excerpts from: <u>Town of Meredith Community Plan, 2002</u>	
10. NHDOT Bureau of Planning, Traffic Section Traffic Report, 2-18-16	
11. LRPC TAC TYP Scoring Summary- 2019	
12. <u>Unsignalized Intersection Safety Strategies- Provide Bypass Lanes on Shoulders at T-Intersections</u> , NCHRP Report 500, Volume 5, FHWA, February 2008	
Letters of Support:	10
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Transportation Project Proposal

Town of Meredith, NH

Application Narrative

PURPOSE STATEMENT

NH Route 25 in Meredith is a high volume, east-west component of the National Highway System corridor in central NH. There are a total of (12) roadway intersections on NH Route 25 easterly of the village core to the Center Harbor town line. The segment is further characterized by (A) considerable left turn movements, (B) significant truck traffic, (C) inadequate sight distances that do not meet criteria for posted speed limits, (D) inadequate shoulders, and (E) crash history that confirms a prevalence of rear end collisions. The purpose of this project is to address documented safety issues on a high volume segment of the National Highway System (NH Route 25) in Meredith, NH.

NEED STATEMENT

The need for this project can be best illustrated by the relevant context and history associated with safety concerns along the rural portion of NH Route 25.

National Highway System. The National Highway System (NHS) is a network of strategic highways within the United States.. Individual states are encouraged to focus federal funds on improving the efficiency and safety of this network. According to the Federal Highway Administration, the 160,000-mile National Highway System includes roads important to the United States' economy, defense, and mobility. There are 150 miles of the National Highway System in the Lakes Region of New Hampshire, 14 of which are in located in Meredith. NH Route 25 is a high volume, east-west component of the NHS in central New Hampshire; connecting I-93 to the west with NH Route 16 to the east. This corridor supports travel and commerce connectivity at many levels, i.e. between states, regions, within the Lakes Region and travel within the local area.

The NHDOT Statewide Freight Plan- Final Report, January 1019 notes:

In describing the statewide freight infrastructure, the plan notes,

The “The National Highway System is critical for public safety, emergency preparedness and statewide connectivity to ensure continuous travel within New Hampshire as well as to neighboring states.” (p. 36).

Based on outreach efforts involving the public and other stakeholders, many overarching issues and concerns were identified. Among them were the general need for east-west corridors and safety concerns at identified locations. (p. 77)

NH 25 in Meredith is identified as a “Critical Rural Freight Corridor Candidate” (p. 159, 160).

NH Route 25 in Meredith. The NH Route 25 segment of the NHS in Meredith is subject to some of the highest traffic volumes in the Lakes Region which are documented in multiple sources including the NHDOT Bureau of Planning, Traffic Section Traffic Report dated 2-18-16. Summer daily traffic volumes are even higher. There are a total of (12) roadway intersections on NH Route 25 easterly of the village core to the Center Harbor town line. The total length of this segment is approximately 2.4 miles. The segment is further characterized by (A) considerable left turn movements, (B) inadequate sight distances that do not meet criteria for posted speed limits, (C) inadequate shoulders, and (D) crash history that confirms a history of rear end collisions.

2002 Community Plan (aka Master Plan). Although the 2002 Community Plan (aka master Plan) is currently under review, there are several statements from that plan which remain relevant to the current proposal:

- Our long range planning is based on shared values and vision. The plan notes, “Transportation to, through and within our community is vital to our economic and personal wellbeing (p. 10).
- “Transportation Goal: Promote a safe, integrated transportation system that effectively moves goods and people while balancing the needs of transportation users with the values of the community.” (p. 44)
- “Transportation Objective A: Improve traffic flow, efficiency and safety throughout the highway networks. Advance transportation improvement projects where a need has been identified,” (p. 44)
- “Transportation and Community Economic Development: community Economic Development opportunities are in part dependent on a safe and

accessible transportation system. Improvement to the transportation system can facilitate additional economic opportunity.” (p. 47)

2009 Transportation Planning Study. In 2009 the Meredith US 3/ NH 25 Improvements Transportation Planning Study (NHDOT Project 10430) was completed. This study (PART A) examined the corridor from the US Route 3/ NH Route 104 intersection, northerly on US Route 3 to the US Route 3/ NH Route 25 intersection and easterly on NH Route 25 to the Center Harbor town line. The easterly portion of NH Route 25 to the Center Harbor town line is referred to as “the rural portion of NH Route 25”. A comprehensive public participation program is well documented (pp.15-17). In the (PART B) phase of the project (i.e. the determination of a preferred alternative) NHDOT reduced both geographic scope of the project and associated Ten-Year-Plan funding to include improvements only within the village core area. The village core area improvements were completed in 2019.

The reduction in geographic scope and funding excluded further consideration of the (6) intersection “sites” along “the rural portion of NH Route 25” notwithstanding that numerous safety issues were identified in the 2009 planning study (pp. 72- 85). This section of the study notes the 2009 safety evaluations give subsequent efforts a place to start (p. 75). Amongst the six interesection sites several common contributing factors were identified:

- Many safety issues along the rural portion of NH Route 25 may be mitigated if the speed were reduced.
- Inadequate sight distances due to vertical alignmanet (crests) and other visual obstructions.
- A nine year crash history was reviewed for each site. A considerable number of rear end collosions were documented at numerous intersections indicative of crashes where vehicles on the main road collide with vehicles waiting to turn.

2013 LRPC TAC Scoring. In 2013 the Lakes Region Pllanning Commission ranked existing Ten Year Plan projects and secondary projects (projects submitted for inclusion in the TYP). One of the 13 secondary projects identified was a submission by the Town of Meredith to address inersection safety improvements

on the rural portion of NH 25 to the Center Harbor town line. The scope of this proposal included a planning element to help prioritize road improvements as well as design and construction funding. That submittal was ranked by the Lakes Region Planning Commission as the No. 2 secondary project for the region but was not included in subsequent Ten-Year Plans.

The Lakes Region Plan 2015-2020 Transportation Chapter. This plan documents the 2013 history mentioned and above and further notes that improving existing infrastructure and improved safety are the primary areas of NHDOT focus. NHDOT's highest priority is the National Highway System given the need for a healthy economy and for mobility (p. 10, 12). The plan identifies NH Route 25 as a "Lifeline Corridor" reinforcing its critical importance to the region (p. 13,14).

Lakes Region Tour Scenic Byway- Corridor Management Plan, 2015. NH Route 25 in Meredith is part of the 111 mile, Lakes Region Tour Scenic Byway that circles Lake Winnepesaukee. The plan affirms the byway's role in supporting tourism and associated local and regional economic opportunities (p. 1, 2, 4 & 8). Safety improvements along the byway will enhance the travel experience.

2019 LRPC Scoring. More recently, in 2019 the Lakes Region Planning Commission re-submitted the same project for review by the TAC as part of the 2020-2030 TYP round. The NH 25 East project was ranked #3. Even though the project wasn't yet "engineered" it did score ahead of several "engineered" projects.

Crash History. The 2009 planning study looked at crash data from 1998 to 2007. Of the four segments examined, NH 25 from US 3/NH 25 intersection to the Center harbor town line had the highest number of crashes, highest number of injuries and the highest number of rear end collisions over a nine year period (p.7). As noted in the 2009 study, rear end collisions are indicative of crashes where vehicles on the main road collide with vehicles waiting to turn.

Recently, 5-year crash history data was provided by the Meredith Police Department for four specific intersections. This information does confirm a high percentage of rear end collisions at 3 of the 4 subject intersections.

Bottom Line. The need to improve public safety along the rural portion of NH Route 25 has been previously identified by NHDOT, successive efforts by the

Lakes Region Planning Commission and the Town of Meredith. The need for this project is well established.

PROJECT SCOPE

The scope of **2020** proposal builds upon the work of the past but is significantly different than prior submittals in terms of scope and approach.

- The current proposal does not include a planning element.
- The current proposal does not include the construction of a new roadway nor does it expand highway capacity.
- The current proposal does not include the re-location of town roads.
- The current proposal does seek to maximize use of existing right-of-way in order to minimize impacts to private property owners and reduce project costs.
- The current proposal is consistent with stated NH DOT focus areas and priorities (i.e. safety improvement on the National Highway System).
- The corridor was recently reviewed by Kevin Morrow, Police Chief, Mike Faller, Public Works Director, John Edgar, Community Development Director and Phil Warren, Town Manager. Together these four senior staff members have a combined 97 years of experience in Meredith. Their preliminary review identified intersection priorities and possible counter measures that will materially improve public safety.
- The current proposal is well supported including support from NH DOT District 3 and the Inter-lakes School District.
- Our collective review has resulted in a refined project scope that includes a package of modest, on- corridor safety counter measures at four intersections:

Location No. 1: NH Route 25 & **Laker Lane.** Laker Lane is the western most and primary entrance to the Inter-Lakes Middle-High School and the Inter-Lakes Elementary School. The approach from to this intersection from the west has an 11% grade that ends just short of this intersection. Left turns into the campus face considerable oncoming traffic often resulting in stopped traffic with que lengths extending down the hill. Inadequate shoulders do not readily permit

traffic to safely bypass the left turn movements. This is particularly problematic during winter conditions.

Safety Counter Measures: Limited widening of the shoulder on the Eastbound lane to accommodate a *by-pass shoulder* to avoid conflicts with left turn movements into the school campus at Laker Lane and to improve mobility/traffic flow for through traffic.

Location No. 2: NH Route 25 & **True Road.** True Road intersects NH 25 just north of Laker Lane and is the sole means of access to the 126 site Interlakes Mobile Home Park. The 2009 study noted that the primary safety issue at this intersection is inadequate sight distance and grading can be modified to increase the sight distance from 50 feet to 200 feet. The posted speed limit in this area is 35 mph. The required sight distance for 35 mph design speed is 250 feet.

Safety Counter Measures: Improved sight distance facing east (north side of NH Route 25) to benefit (A) traffic exiting and entering True Road; and (B) visibility by eastbound thru traffic not having sufficient view of the intersection. Limited widening of the shoulder on the Eastbound lane to accommodate a *by-pass shoulder* to avoid conflicts with left turn movements onto True Road and to improve mobility/traffic flow for through traffic.

Location No. 3: NH Route 25 & **Quarry Road.** As noted in the 2009 study the issues at this intersection are sight distance and turning movements compounded by road alignment and travel speeds. The popular Moulton Farm and a trail head for the Page Pond Community Forest trail head are both located on Quarry Road. Both the Page Pond Community Forest and Moulton Farm (conserved via easement) are both identified as resource attributes along the Lakes Region Tour Scenic Byway. The posted speed limit in this area is 45 mph.

Safety Counter Measures: Limited widening of the shoulder on the westbound lane to accommodate a *by-pass shoulder* to avoid conflicts with left turn movements onto Quarry Road and to improve mobility/traffic flow for through traffic. Improved sight distance for exiting traffic facing east and west.

Location No. 4: NH Route 25 & **Patrician Shores Circle.** This intersection located on the south side on NH 25 provides access to an 83-home development known as

Patrician Shores. The posted speed limit changes from 55 mph (Center Harbor) to 45 mph (Meredith) at the town limits.

Safety Counter Measures: Improve sight distance for traffic exiting onto NH Route 25 facing east through tree removal and grading on the north side of the road. Also on the north side, limited widening of the shoulder to accommodate a *bypass shoulder* to avoid conflicts with left turn movements onto Patrician Shores Circle and to improve mobility/traffic flow for through traffic.

This proposal recognizes that: (1) the NHDOT TYP is fiscally constrained, (2) the TYP allocation to the Lakes Region projects (approx. \$4.4 mil. total) is likewise severely constrained, (3) the proposed safety counter measures, although modest, will materially improve public safety in the corridor, and (4) maximum use of existing right-of-way for relatively modest improvements can lessen impacts to private property owners and reduce project costs.

Actual safety countermeasures and locations would be finalized by NHDOT with town input through the Meredith Select Board at the onset of the conceptual design phase of the project. This process would be similar in concept to the Select Board/NHDOT partnership that resulted in the 2016 intersection upgrade at NH Route 104 and Meredith Center Road that was accomplished through the Highway Safety Improvement Program. Note: the scope of the NH Route 104 project included a by-pass shoulder on the National Highway System highway at Chase Road.

SUPPLEMENTAL INFORMATION

How involved has the public been in this project so far? Extensive public participation is well documented in Section 1.4 of Meredith US 3/ NH 25 Improvements Transportation Planning Study (NHDOT Project 10430), 2009 (pages 8-15). This study serves as the impetus for the current proposal.

Are there opportunities for further public discussion of this project in the near future? None are anticipated at this time.

Will the project be managed locally? No.

What alternative options or methods have been considered to address this need and what makes this project proposal the best option?

Alternatives Considered.

No build. We could simply ignore the safety issues, however as public officials we are obligated to ensure the safety of our citizenry and the public as a whole. Doing nothing fails to address these significant safety issues and is not an option.

Highway Re-alignment and Reconstruction. Existing vertical and horizontal highway alignments do contribute to sight distance issues. However re-alignment and reconstruction of major portions of NH Route 25 would be extremely costly, trigger extensive environmental reviews and may not represent the best cost-benefit outcome.

Re-location of Town Roads. Existing town roads could be realigned to address sight distance issues however this is not favored as also being too costly and too impacting.

Enhanced Signage to Reduce Travel Speeds. As noted in the 2009 study, travel speeds above posted speed limits is a contributing factor. Signage in of itself may not solve the problems, however improved signage could be a component of the overall safety countermeasure package.

The Best Option. Therefore, it is the town's view that modest safety counter measures at up to four prioritized intersections along NH 25 represents the best, practical and most realistic option to finally address the safety issues acknowledged by NH DOT, LRPC and the Town of Meredith.

Flexibility. As a practical matter the proposed improvements mentioned previously have not been engineered recognizing that they wouldn't likely be implemented for at least 10-12 years. Therefore, the town anticipates the need for flexibility in finalizing the final scope (type, location and number of improvements) based upon NHDOT review as we proceed through the TYP process and on towards the conceptual design phase.

Timing. On July 24, 2020 the 2021-2030 TYP was signed into law. Typically, new projects are added to the end of the plan. The limited scope of the proposed improvements may justify NHDOT consideration for project acceleration. Deferral

to 2031 or 2032 is not desirable. As was noted by NHDOT when addressing the question of accelerating project scheduling, “The budgets that are set up of the regions are not hard and fast budgets, they are guidelines for the addition of proposed new projects (or increases to existing projects) in the last 2 years of the TYP. Additionally, financial constraint in all years is also dependent on the scope, schedule and budget of all the projects, and so there was give and take in the schedule of projects in the years that these projects were moved into. Projects were either delayed because of constraint, were not expected to be ready based on progress, cash flow, or some combination of things.” (reference personal communication from Susan Slack, Principal Planner, Lakes Region Planning Commission to John Edgar, Community Development Director dated July 17, 2020). We believe that this project is a good candidate for the “give and take” discretion referred to above.

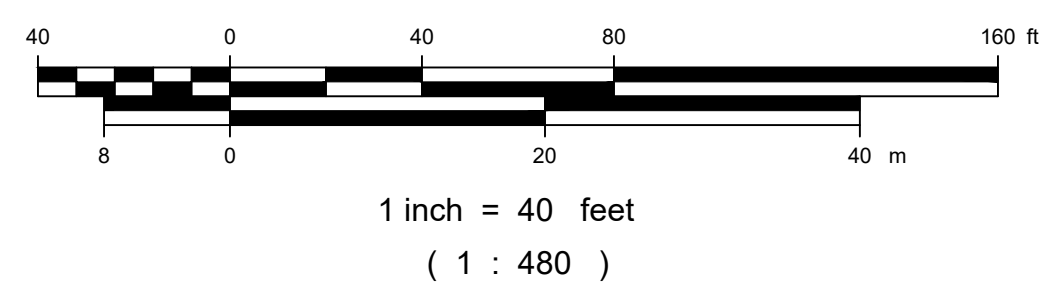
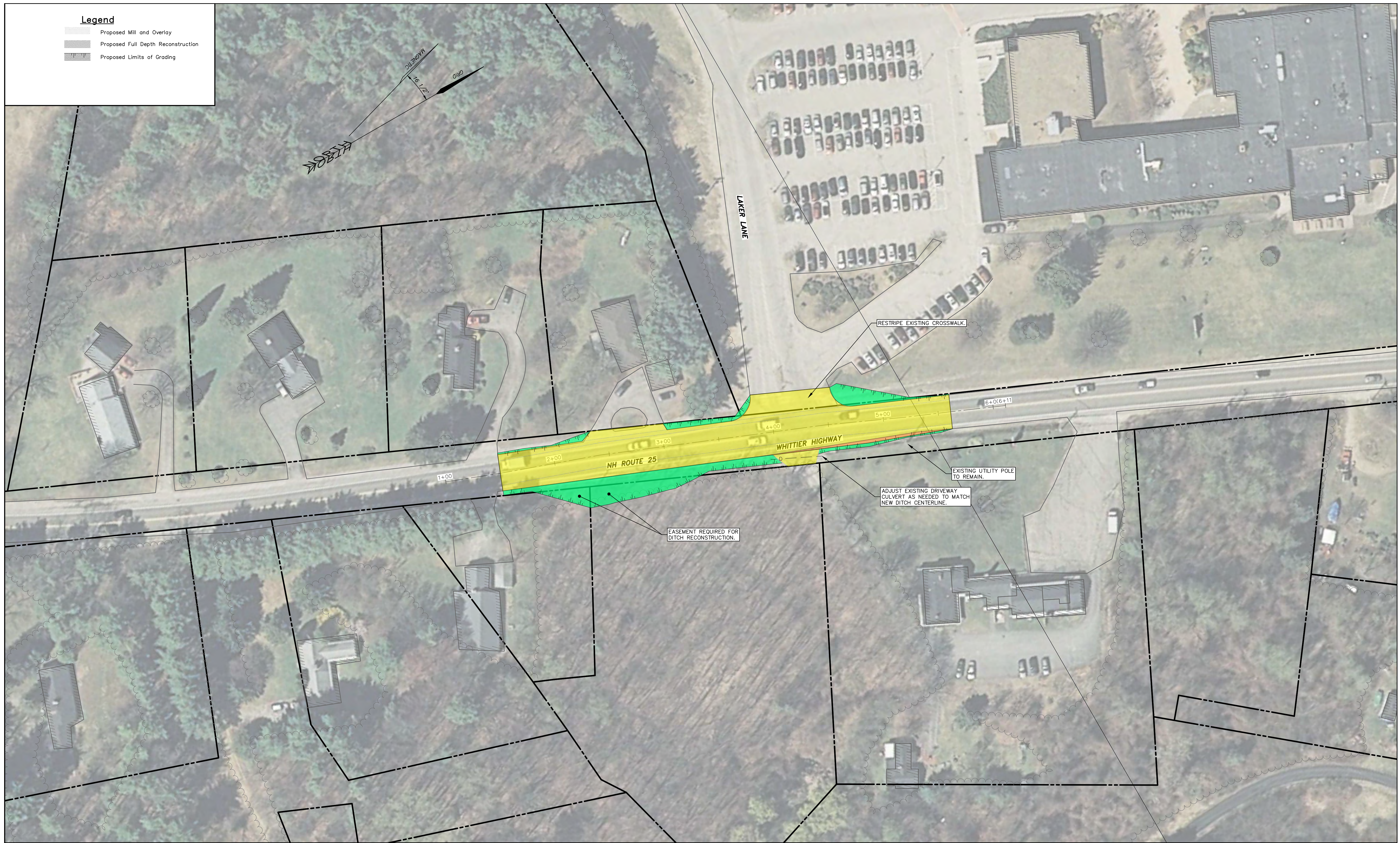
ATTACHMENTS

The following documents are submitted as part of this application:

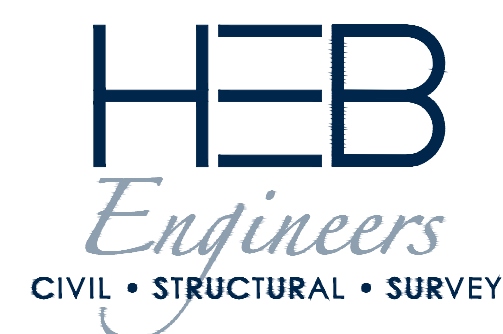
1. Project Location Map
2. Site Photographs
3. Project Cost Estimate
4. Five-Year Crash Analysis (January 1, 2015 to August 5, 2020)- Meredith Police Department
5. Excerpts from: Meredith US 3/ NH 25 Improvements Transportation Planning Study, 2009
6. Excerpts from: Lakes Region Plan 2015-2020- Transportation Chapter
7. Excerpts from: Lakes Region Tour Scenic Byway- Corridor Management Plan, 2015
8. Excerpts from: NHDOT Statewide Freight Plan-Final Report, 2019
9. Excerpts from: Town of Meredith Community Plan, 2002
10. NHDOT Bureau of Planning, Traffic Section Traffic Report, 2-18-16
11. LRPC TAC TYP Scoring Summary- 2019
12. Unsignalized Intersection Safety Strategies- Provide Bypass Lanes on Shoulders at T-Intersections, NCHRP Report 500, Volume 5, FHWA, February 2008

Letters of Support:

- a. Select Board
- b. Meredith Police Department
- c. NHDOT District 3
- d. Inter-Lakes School District
- e. Planning Board
- f. Meredith Conservation Commission
- g. Moulton Farm



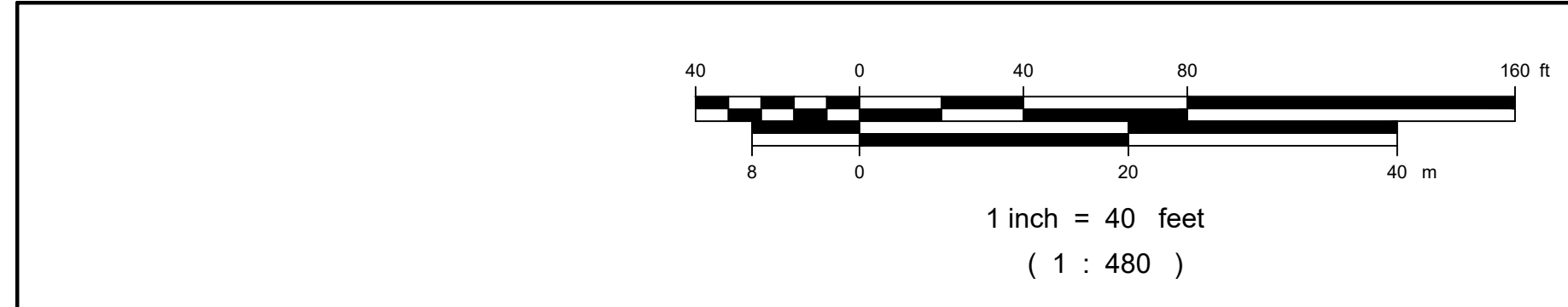
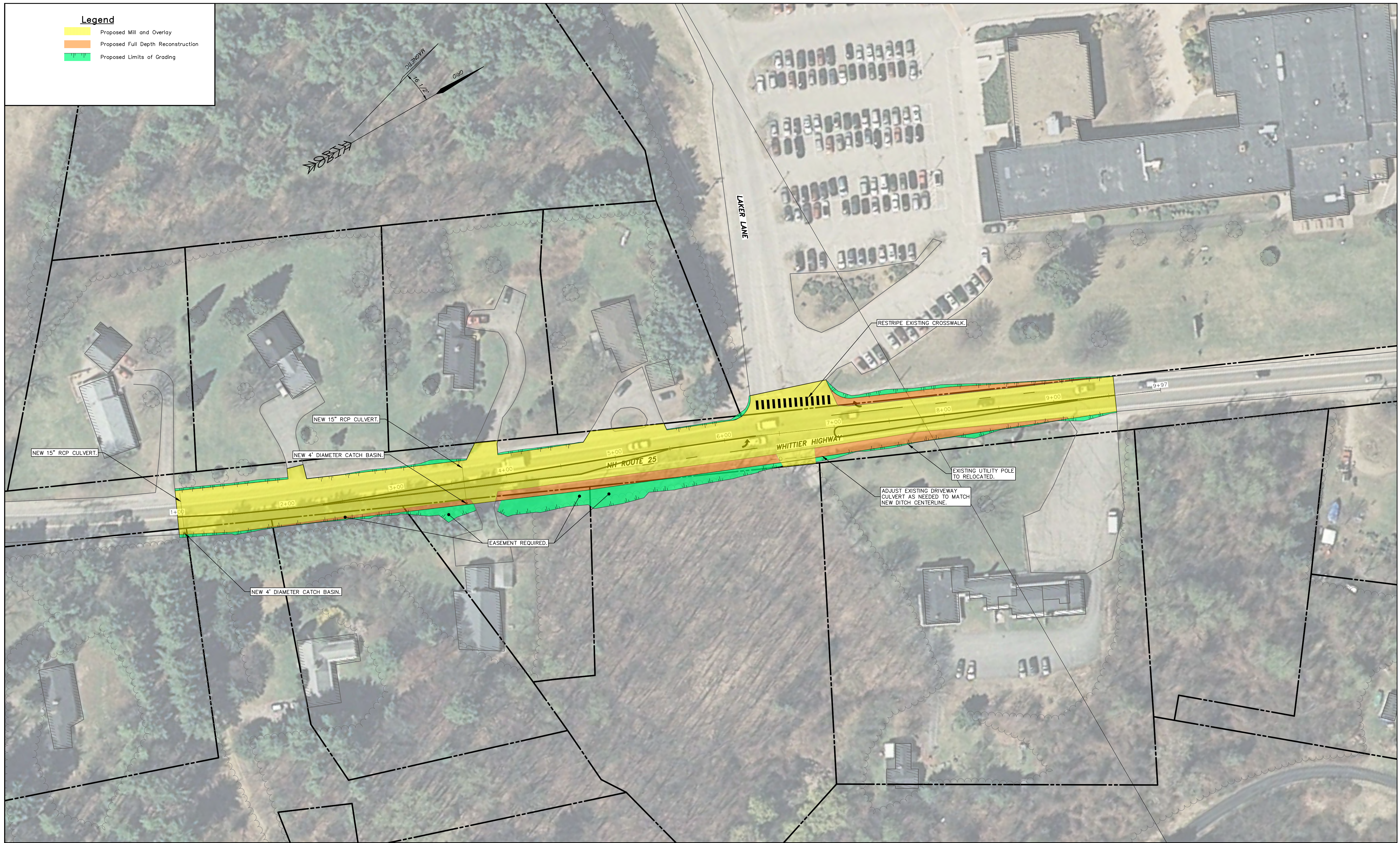
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SURVEYED BY	—
DESIGNED BY	—
DRAWN BY	—
CHECKED BY	—
FIELD BOOK	—
SCALE	1" = 40'
DATE	MM/DD/YYYY

Laker Lane Intersection Improvements Sketch
for the
Roadway Study
located in
Meredith, NH
prepared for
Lakes Region Planning Commision



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Laker Lane Intersection Improvements Sketch
for the
Roadway Study
located in
Meredith, NH
prepared for
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2022-125
SK-1
SHEET 1 OF 3

Engineer's Opinion of Probable Construction Cost

HEB Project #: 2022-125
Date: 11/02/22
Computed by: JDP

Intersection Improvements on NH-25
Meredith, New Hampshire

NHDOT Item #	Description	Unit	Unit Cost	Laker Lane Left & Right Turn Lanes		Laker Lane Bypass		True Road Bypass & ISD	
				Quantity	Total Cost	Quantity	Total Cost	Quantity	Total Cost
Earthwork									
201.1	Clearing and Grubbing	Acre	\$ 30,000.00	0.2	\$ 6,000.00	0.1	\$ 3,000.00	0.1	\$ 3,000.00
203.1	Common Excavation	CY	\$ 18.00	680	\$ 12,240.00	75	\$ 1,350.00	1,350	\$ 24,300.00
203.2	Rock Excavation	CY	\$ 90.00	40	\$ 3,600.00	5	\$ 450.00	70	\$ 6,300.00
214	Fine Grading	Unit	\$ 7,500.00	1	\$ 7,500.00	1	\$ 2,500.00	1	\$ 2,500.00
Base Courses									
304.1	Sand	CY	\$ 30.00	250	\$ 7,500.00	30	\$ 900.00	90	\$ 2,700.00
304.2	Gravel	CY	\$ 35.00	250	\$ 8,750.00	30	\$ 1,050.00	90	\$ 3,150.00
304.3	Crushed Gravel	CY	\$ 40.00	250	\$ 10,000.00	30	\$ 1,200.00	90	\$ 3,600.00
Pavements									
403.11	Hot Bituminous Pavement, Machine Method	Ton	\$ 90.00	420	\$ 37,800.00	170	\$ 15,300.00	338	\$ 30,403.13
403.12	Hot Bituminous Pavement, Hand Method	Ton	\$ 200.00	200	\$ 40,000.00	20	\$ 4,000.00	203	\$ 40,537.50
410.22	Asphalt Emulsion for Tack Coat	Gal	\$ 8.00	480	\$ 3,840.00	190	\$ 1,520.00	235	\$ 1,880.00
417	Cold Planing Bituminous Surfaces	SY	\$ 5.00	3,800	\$ 19,000.00	1,870	\$ 9,350.00	1,900	\$ 9,500.00
Structures									
	Retaining Wall	SF	\$ 120.00	0	\$ -	0	\$ -	675	\$ 81,000.00
	Relocate Stone Wall	LF	\$ 100.00	0	\$ -	0	\$ -	100	\$ 10,000.00
Incidental Construction									
603.00215	15" R.C. Pipe 2000D	LF	\$ 100.00	600	\$ 60,000.00	48	\$ 4,800.00	0	\$ -
604.124	Catch Basin, Type B, 4'-Diameter	EA	\$ 4,000.00	4	\$ 16,000.00	0	\$ -	0	\$ -
604.4	Reconstructing/Adjusting Catch Basins	LF	\$ 750.00	1	\$ 750.00	0	\$ -	2	\$ 1,500.00
604.62	Drainage Manhole Cover and Frames	EA	\$ 700.00	4	\$ 2,800.00	0	\$ -	0	\$ -
608.12	2" Bituminous Sidewalk	SY	\$ 60.00	580	\$ 34,800.00				
609.01	Straight Granite Curb	LF	\$ 60.00	1,500	\$ 90,000.00	0	\$ -	50	\$ 3,000.00
615.024	Relocating Traffic Sign Type B	EA	\$ 600.00	2	\$ 1,200.00	0	\$ -	2	\$ 1,200.00
615.02201	Traffic Sign Type B, Breakaway Mounts	SF	\$ 180.00	2	\$ 360.00	0	\$ -	0	\$ -
618.7	Flaggers	HR	\$ 55.00	720	\$ 39,600.00	360	\$ 19,800.00	360	\$ 19,800.00
619.1	Maintenance of Traffic	Unit	\$ 1.00	22,636.3	\$ 22,700.00	5,890	\$ 5,890.00	16,370.0	\$ 16,370.00
628.2	Sawed Bituminous Pavement	LF	\$ 4.00	2,200	\$ 8,800.00	410	\$ 1,640.00	750	\$ 3,000.00
632.0104	Retroreflective Paint Pavement Marking, 4" Line	LF	\$ 0.50	5,950	\$ 2,975.00	1,700	\$ 850.00	2,200	\$ 1,100.00
632.0124	Retroreflective Paint Pavement Marking, 24" Line	LF	\$ 0.75	70	\$ 60.00	32	\$ 24.00	10	\$ 7.50
632.02	Retroreflective Paint Symbol (Turn Arrows)	SF	\$ 25.00	50	\$ 1,250.00	580	\$ 14,500.00	0	\$ -
645.531	Silt Fence	LF	\$ 5.00	1,500	\$ 7,500.00	250	\$ 1,250.00	700	\$ 3,500.00
646.31	Turf Establishment with Mulch and Tackifiers	SY	\$ 7.00	1,200	\$ 8,400.00	230	\$ 1,610.00	1,100	\$ 7,700.00
692	Mobilization	Unit	\$ 1.00	40,745.3	\$ 40,800.00	8,830	\$ 8,830.00	24,550.0	\$ 24,550.00
698.13	Field Office Type C	Mo.	\$ 2,000.00	6	\$ 12,000.00	4.0	\$ 8,000.00	4	\$ 8,000.00
699	Miscellaneous Temporary Erosion and Sediment Controls	\$	\$ 10,000.00	1	\$ 10,000.00	1	\$ 5,000.00	1	\$ 5,000.00
	Utility Pole Relocations	EA	\$ 15,000.00	1	\$ 15,000.00	0	\$ -	5	\$ 75,000.00

Laker Lane - Left & Right Turn Lanes		Laker Lane - Shoulder Bypass		True Road - Shoulder Bypass & ISD Improvements	
Construction Items (Base)	\$532,000	Construction Items (Base)	\$113,000	Construction Items (Base)	\$389,000
Minor Item Allowance (20%)	\$107,000	Minor Item Allowance (30%)	\$34,000	Minor Item Allowance (20%)	\$78,000
Contingency (10%)	\$54,000	Contingency (10%)	\$12,000	Contingency (10%)	\$39,000
2023 Cons. Engineering	\$133,000	2023 Cons. Engineering	\$46,000	2023 Cons. Engineering	\$98,000
2023 Construction Cost	\$826,000	2023 Construction Cost	\$205,000	2023 Construction Cost	\$604,000
2032 TYP Construction Cost	\$1,060,000	2032 TYP Construction Cost	\$263,000	2032 TYP Construction Cost	\$819,000
2023 Prelim. Engineering	\$124,000	2023 Prelim. Engineering	\$31,000	2023 Prelim. Engineering	\$91,000
2027 TYP Prelim. Engineering	\$139,000	2027 TYP Prelim. Engineering	\$35,000	2027 TYP Prelim. Engineering	\$123,000
2023 Right-of-way	\$80,000	2023 Right-of-way	\$0	2023 Right-of-way	\$80,000
2030 Right-of-way	\$98,000	2030 Right-of-way	\$0	2030 Right-of-way	\$98,000
Total Project Cost (Current)	\$1,030,000	Total Project Cost (Current)	\$236,000	Total Project Cost (Current)	\$775,000
Total Project Cost (TYP)	\$1,297,000	Total Project Cost (TYP)	\$298,000	Total Project Cost (TYP)	\$1,040,000